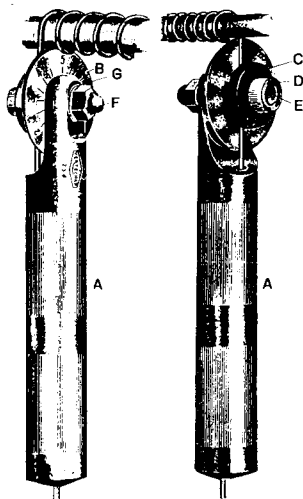
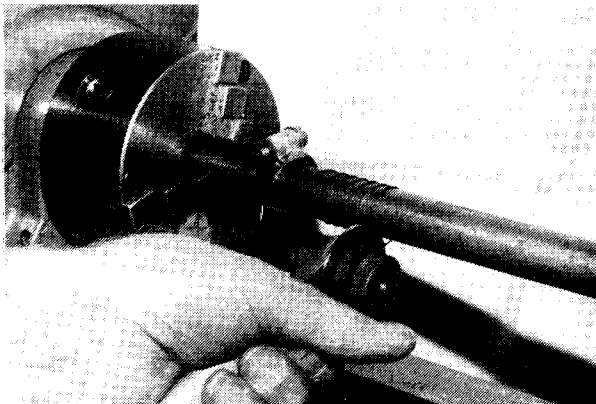




Left, Fig. 21 The "ACRU" spring-winder. A, Handle; B, calibrated wedge-washer; C, Tension washer; D, Tension adjuster;



E, pivot bolt; F, locknut for adjusting B; G, washer. **Above, Fig. 22** The ACRU in action. It is preferable to have the hand tee-rest to support the tool. For close-coiled springs the ACRU is used with the wedge-washer on the other side of the fed wire.

A Commercial Winder

A commercial *spring winder* which I obtained almost 40 years ago is the ACRU, shown in Fig. 21. This comprises a hollow handle, about 1in. diameter, through which the wire is passed, thus reducing all risk of injury from cut ends. The wire passes between a fairly hard fibre washer "C" and a disc "B", and the grip of the washer can be adjusted to alter the winding tension. The disc "B" is graduated in thickness (it is in the form of a circular wedge) from about 0.05in. to 0.175in. This is adjusted to a position which gives the required coil spacing, one side of the wedge bearing on the coil already wound, and the other, of course,

on the feeding spring wire. In addition, the O.D. of the wedge-washer bears on the mandrel and helps to relieve it of some of the bending forces. The device can be used either way up, so that both left- and right-hand helices can be wound. Fig. 22 shows it in operation. The coil is a bit ragged, because it "lost its grip" while I was setting off the camera! The device does need a little practice, and is best used with the hand rest underneath to give some support, but provided that the initial coil is well-formed (best done by pulling the lathe round by hand) you can wind springs on middle back-gear quite effectively. It is made by the ACRU ELECTRIC TOOL Co., Ltd., now trading as A. C. RUBERT & Co., Acru Works, Cheadle. It can, of course, be used for winding tension springs as well, simply by turning it over so that the wedge-disc runs ahead of the coils.